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ABSTRACT

In order to reach instate clientele more efficiently and effectively, agricultural education and home economics teacher educators in the state of Washington have used two-way microwave television technology. The Washington Higher Education Telecommunication System (WHETS) has allowed the Washington State University College of Agriculture and Home Economics to reach professionals at 4 sites up to 350 miles distant with up-to-date technical information. The system has been used mainly to conduct formal course work. This has allowed courses to originate from many locations in the state, allowing greater flexibility in faculty assignment. The system has been well received and appreciated by its target audience. It is in its second year of offering graduate courses, and plans have been made to offer the 12-semester unit core required for the Master's program. (KC)

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ELECTRONIC FACE-TO-FACE INSERVICE EDUCATION

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Summary

In order to more efficiently and effectively reach instate clientele, Agricultural Education and Home Economics teacher educators have utilized two-way microwave television technology. This has allowed the WSU College of Agriculture and Home Economics to reach professionals at 4 sites up to 350 miles distant with up-to-date technical information. The system has been mainly used to conduct formal course-work. This has allowed courses to originate from many locations in the state and thus allowing greater flexibility in faculty assignment.

ELECTRONIC FACE - TO - FACE INSERVICE EDUCATION

Large states have continuing problems reaching clientele groups. To have university personnel visit in distant parts of the state adds significantly to travel costs and reduces faculty time for other critical tasks. Washington State University is located within 8 miles of the Idaho border and over 300 miles from approximately two thirds of the state's population.

Several methods have been utilized to address these problems. These include satellite programs, VCR tapes, telephone conferences, electronic blackboards, slide tape programs and numerous publication activities, all with well known short comings.

A Different Technology

Washington State University (WSU) is utilizing another methodology: a legislature financed Washington Higher Education Telecommunication System (WHETS). The WHETS system links WSU in Pullman with WSU Spokane (80 miles), WSU Tri Cities (130 miles), WSU Vancouver (338 miles) and the University of Washington in Seattle (295 miles). The system also links to the University of Idaho at Moscow (8 miles) and Boise (320 miles).

WHETS is a land-based microwave system which utilizes analog video radios operating in the 6.6 and 23 GHz Private Operational Fixed Microwave bands. There are 10 repeater stations which relay signals to the branch campus classrooms. This technology allows active two-way video and audio communication between the source and viewers. In addition, the system also beams one way video and two way audio via Instructional Television Fixed Service (ITFS) directly to 6 industries in Spokane so students can attend class without leaving work. The capacity to direct signals from any WSU branch to any other branch exists.

The system was first established to offer formal distance education to "high-tech" industries in the Spokane and Vancouver areas and the Tri-Cities near the Hanford Reservation. These offerings have now expanded into several formal graduate programs at these sites. The system is operative 6 days per week, Monday through Thursday from 7:00 a.m. to 10:00 p.m., Fridays from 7:00 a.m. to 5:00 p.m. and Saturdays from 9:00 a.m. to noon.

System Operation

Special classrooms are utilized to originate programs for WHETS. These classrooms seat are equipped with voice activated microphones so students can communicate with the teacher and students at other sites. Remotely controlled cameras view both the teacher and the students. All sites have overhead cameras that can focus on the podium where standard size paper graphics or overhead-like graphics can be projected for the students.

The instructor also has a bank of TV monitors in back of the classroom to view students at each remote site. Two additional TV monitors in the front of the room show viewers in remote classrooms so students, for example, in a class in Pullman can talk to classmates in Spokane and Vancouver and see each other on their classroom monitors.

It is possible to show video tapes and slides on the system. When classes are offered, they are video taped so students who must miss a class have opportunity to view it another time. This feature is very important for full-time professionals who must travel for their employers. It is also of value for a student who must work non traditional hours or who is ill.

Inservice Uses

The Department of Adult and Youth Education in WSU's College of Agriculture and Home Economics prepares Agriculture and Home Economics teachers for the state. The department is also obligated, by contract with the Superintendent of Public Instruction (SPI) , to develop inservice education programs and activities for teachers.

Department faculty found it difficult to fund and conduct inservice education for their teacher populations (Agriculture, 222; Home and Family Life, 900) . This is particularly true when the large majority are concentrated on the western side of Washington state.

It is difficult to ask an outstanding professor to travel across the state to give a one or two hour inservice program for teachers even when a plane is used. It is much easier to ask someone to make an on-campus presentation which will take a minimum amount of time away from their other obligations.

The major problem faced was when to access the system. It is currently being used almost full-time with formal classes on the two channels currently available. The first inservice use was then limited to spring vacation when no classes were being held.

The first six-hour program (March 1988) originated in Pullman. The Dean of the College of Agriculture and Home Economics served as the master of ceremonies for the entire day. The Directors of Extension and the State Department of Agriculture gave futures presentations regarding the changes needed for the 21st century. A school district described a community effort which established a foundation to assist the improvement of agricultural education at the high school and community college. Population trends were addressed by a sociologist and skills

needed for agribusiness were discussed by the Agricultural Economics chair. A plant scientist summarized current biotechnology and genetic engineering for tomorrow's agriculture. There were 15 minutes of discussion for each 45 minute presentation.

Results

The efforts to reach clientele at remote sites have been deeply appreciated by the teachers and the participants. The 4th inservice WHETS presentation was offered in October 1989 co-sponsored and supported by the Superintendent of Public Instruction (SPI) office. It was the first state-wide joint teacher/youth (FFA) leadership training workshop. Presentations originated at 2 different sites. Staff from either SPI or WSU hosted each site.

The March 1989 inservice day was shared between Home Economics and Agriculture. Well over 100 home and family life teachers were able to hear and interact directly with outstanding speakers, experts in the area of teaching "sensitive subject matter." Program evaluations were outstanding.

Agriculture inservice training has featured updates in horticultural technology, food science and tissue culture. One half-day program was on international marketing and preparing agriculturalists to understand Pacific Rim countries and their cultures.

The Department of Adult and Youth Education is in its second year of offering graduate courses over the system. Over a 3 year period, the department plans to offer the 12 semester unit core required for the Master's program via WHETS. Course instruction, up to now, has originated from 3 different WSU branches. This has given the department freedom to seek the best possible instructor for a given course and semester. It also allows an instructor traveling in another part of the state to offer the class from a convenient location.

The Future

One WSU College has already held faculty meetings over the network because they have faculty at other university branches. It is anticipated that there will be high demand for other university activities to be conducted over WHETS. However the Legislature, chief system sponsor, is clear that support of "high-tech" uses shall continue to be the highest priority followed by formal course offerings in any field.

It is hoped that the legislature will support system expansion so that additional channels can be utilized and additional sites connected. Current plans are to link the College of Agriculture and Home Economics research and extension centers to the system. This would give even broader state-wide coverage and expand the number of individuals it is possible to reach.

The best of all worlds would be to have inservice education conducted in person by expert presenters. Budgetary and professional pressures make this alternative almost impossible in many states. A two-way interactive microwave system is a very effective and viable alternative choice.

(WHETS.art).